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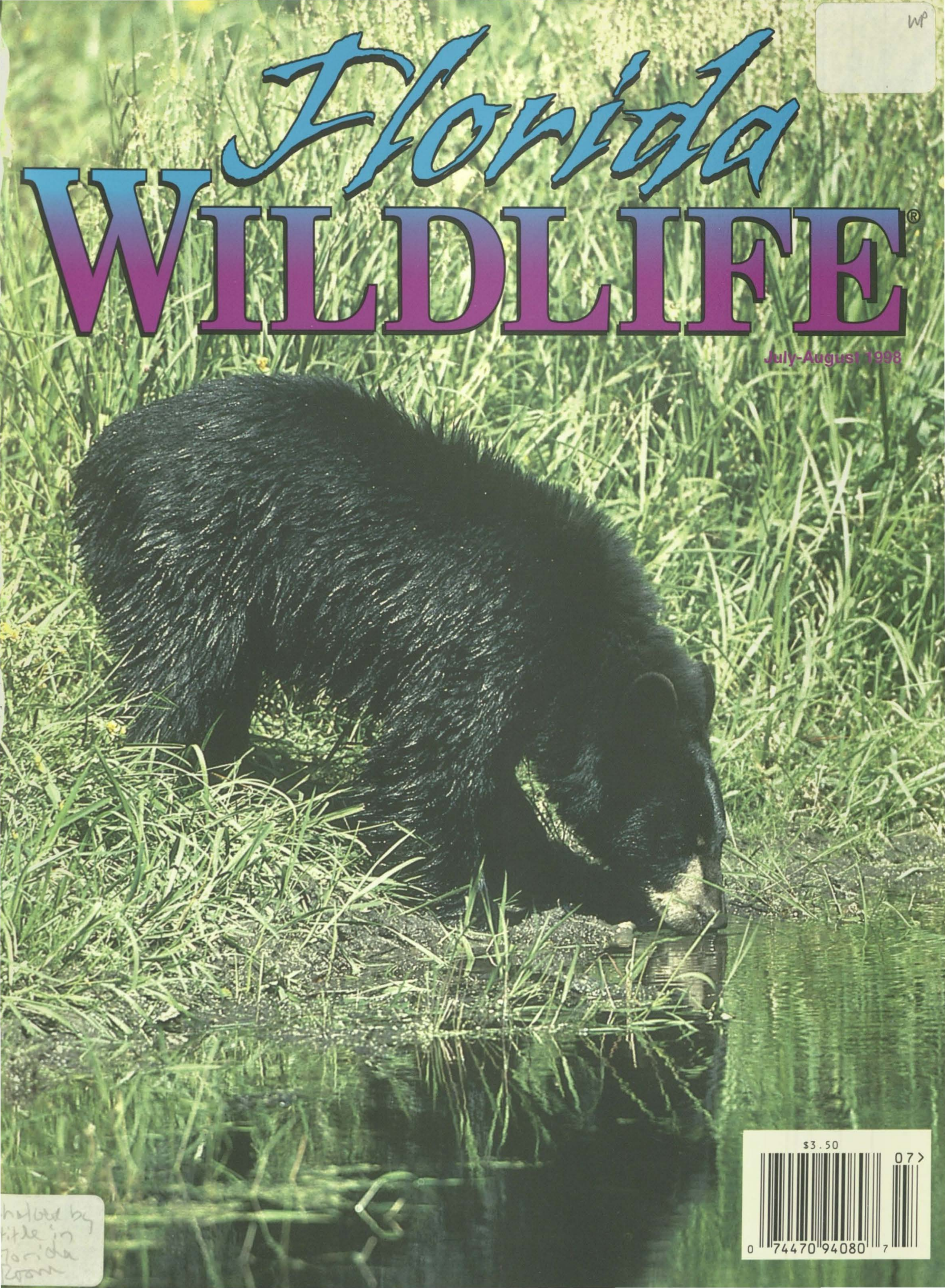
July-August 1998



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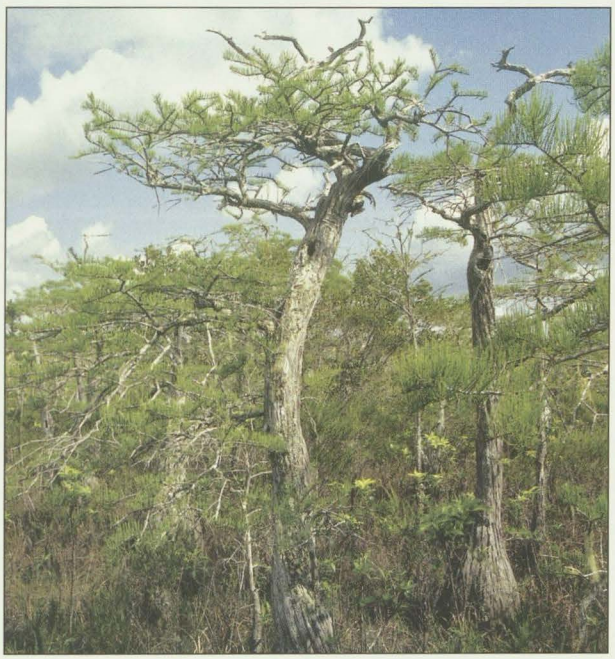
The cover photo of a young Florida black bear was captured on film by Leonard Lee Rue Jr.



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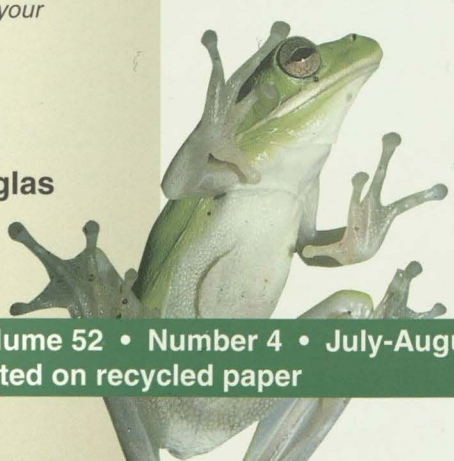

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What's Going on with the Frogs?

By James Call

Children love to explore. When a group of Minnesota elementary students was given an assignment to study a pond near the small town of Henderson they were excited. What they found in the summer of 1995 has excited scientists and launched numerous studies.

The students caught a large number of deformed frogs in the wetlands near the pond. Within three months there were reports of similar frogs living elsewhere in the Minnesota River Valley. Since then reports of frogs with missing legs, eyes growing in their throats and malformed legs have been reported in 35 states and numerous countries on four continents.

Researchers at the University of Mississippi have established a link between abnormal frog development and chemicals found in more than 400 herbicide and pesticide brands used in Florida.

Researchers agree that something is happening here. What is not exactly clear. Frog deformities are not necessarily new. Reports date back to the 1700s, but the number of reports has increased dramatically since 1995. In some areas of the Midwest, anywhere between 10 and 75 percent of specific species of frogs have deformities. In Florida the North American Reporting Center for Amphibian Malformations list two reported cases of deformed frogs; one in Jackson County in 1954, the other in Highlands County in 1992. Larry Fink of the Florida Department of Environmental Protection says, "It's not a problem. We've not seen it. It's something we're not tuned into."

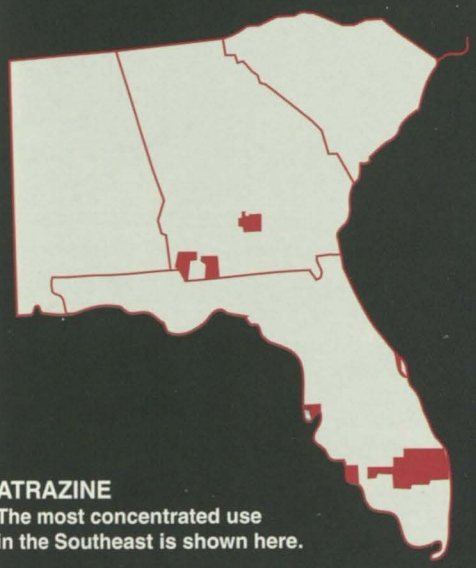
There may be good reason why ▷

Rob and Ann Simpson

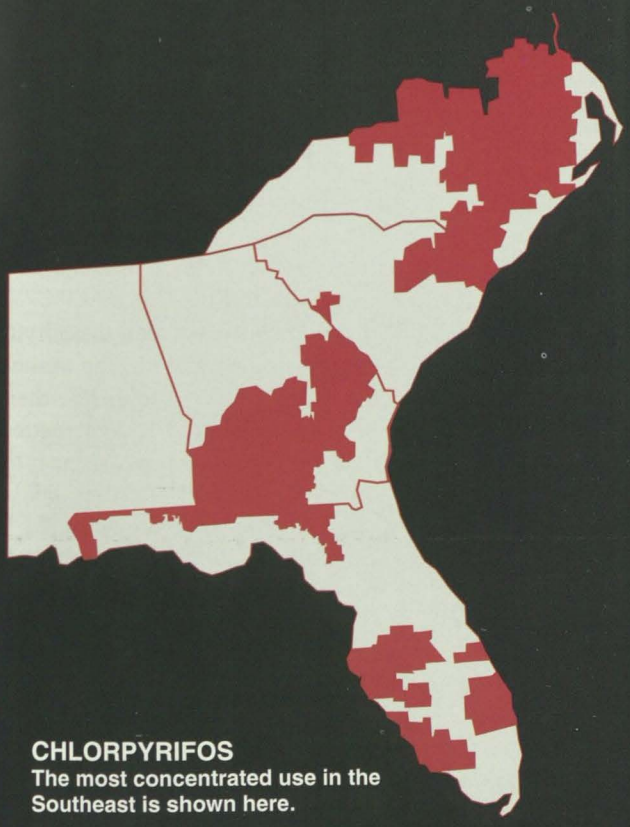
This six-legged bullfrog (Rana catesbeiana) has four legs on one side and two legs on the other – all functional.

Dr. Stephen T. Threlkeld

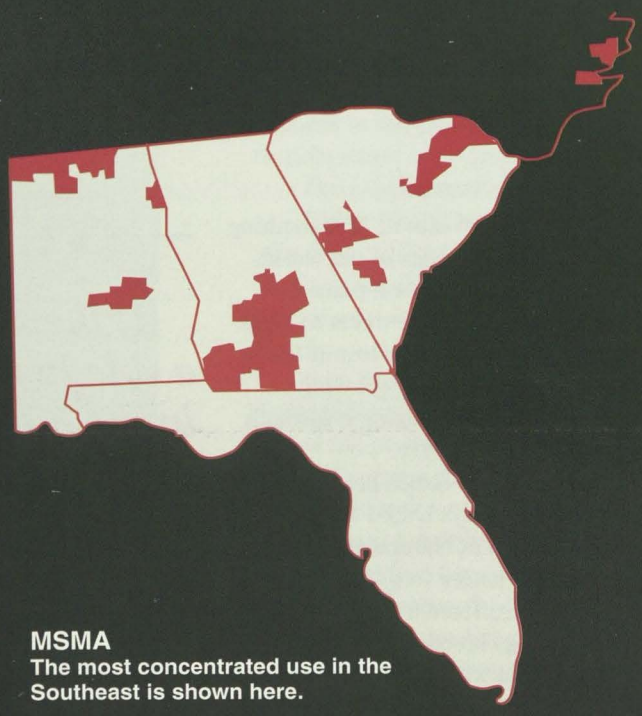
A one-eyed froglet from a 1996 University of Mississippi experiment involving Atrazine, Chlorrpyrifos and MSMA.



ATRAZINE
The most concentrated use in the Southeast is shown here.



CHLORPYRIFOS
The most concentrated use in the Southeast is shown here.



MSMA
The most concentrated use in the Southeast is shown here.

Detailed maps showing state pesticide level estimates for individual crops can be found at the USGS Pesticide National Synthesis Project web site at: http://water.wr.usgs.gov/pnsp/use92/

Dr. Stephen T. Threlkeld

Above: Dr. Britson and Joellyn Enoch check a 1997 University of Mississippi experiment with UV filters in place.

Florida is not tuned into it. If something is happening to the frogs of the world, Florida may not be the best place to study it. The number one threat to frogs in the sunshine state is the lost of living space. The state's rapidly growing human population is making it difficult for all amphibians to live.

"There are two issues here that may be intertwined," says Dick Franz of the Florida Museum of Natural History. "By their very nature frogs are vulnerable and have suffered a decline."

Many frogs breed in what scientists call "ephemeral wetlands" and live elsewhere. These ponds which come and go depending on rain are not a dependable resource. Frogs like them because they don't contain fish which tend to eat eggs and tadpoles. Frogs breed there and then go live in the uplands. When the uplands become a housing development or a business area, these living spaces disappear. When the wetlands become altered, the frogs lose their breeding habitats. The combination of development in the uplands and the disappearance of isolated wetlands make it more and more difficult for frogs to find suitable homes as Florida becomes more urban.

If the sun is playing a role in the increase in the number of frog abnormalities it may be due to a thinning of the ozone layer. UV-B radiation, invisible short wavelengths in sunlight, is blamed for an increase in skin cancer in recent years.

The second issue related to the recent outbreak of deformities may be linked to two things very near and dear to Floridians: chemicals to control bugs and weeds, and the sun. Researchers at the University of Mississippi have found a link between abnormal frog development and chemicals found in more than 400 herbicide and pesticide brands used in Florida. When put in a pond with healthy frogs and exposed to direct sunlight, the number of deformities among the frogs increased.

Scientists investigate mutations of fish, frogs and other amphibians because of their sensitivity to changes in water quality. Frogs are very sensitive to changes in the environment because they live both in water and on land and breathe through their skin. Their moist vascular system meets the environment constantly. If toxins are present in their habitat, it will show up in them. In this respect they are sentinel creatures like canaries in a coal mine. At one time, coal miners used canaries to alert them to poisonous gases in mines; when the canary died, miners knew it was time to go. Researchers and environmentalists could say the same thing about frogs. They point to them as nature's early warning system when there's something wrong in the environment.

If the sun is playing a role in the increase in the number of frog abnormalities, it may be due to a thinning ozone layer. UV-B radiation, invisible short wavelengths in sunlight, is blamed for an increase in skin cancer in recent years. It is a link researchers are following because frog eggs float on the surface water, absorbing sunlight with ultraviolet radiation. The problems frogs are experiencing may be what's in store for other animals farther down the road.

"A healthy frog population is an indication of a healthy eco-system," said Carol Britson a research scientist at the University of Mississippi.

Britson and her colleagues duplicated some of the frog deformities reported throughout the upper Midwest in experimental mesocosms outside Oxford. Their research zeroed in on three commonly used pesticides and herbicides. Atrazine, chlorpyrifos and MSMA are used throughout Florida by farmers, homeowners and even road crews to control weeds and pesky insects. "(Because of our experiments) we know certain factors will cause this type of response," said Britson.

"We (now) know there's a causative relationship between chemicals and UV radiation on responses. In an outdoor setting we observed the metamorphizing of the tadpoles."

The experiment documented what chemicals were present in the water when frog eggs were placed in the pond. At different times during the frogs' life cycles atrazine, chlorpyrifos, methly mercury and MSMA were introduced to the water.

By manipulating the interaction of UV radiation and chemicals, researchers documented a substantial increase in the number of abnormalities, including missing eyes, missing limbs, contorted limbs, curvature of spine and the health of the frogs in general.

The experiment found that atrazine, a herbicide used on lawns, golf courses and farms decreased the number of eggs hatching; chlorpyrifos, a pesticide found in 391 brands used in Florida, increased the number of abnormalities, and MSMA, a herbicide used on farms, roadways and schoolyards, decreased the number of the tadpoles maturing into frogs.

When UV radiation was filtered or blocked, the harmful effects of the chemicals were minimized. The most drastic ill-effects occurred during the egg stage of development. There was less damage to the frog when it was exposed to the chemicals during the tadpole stage.

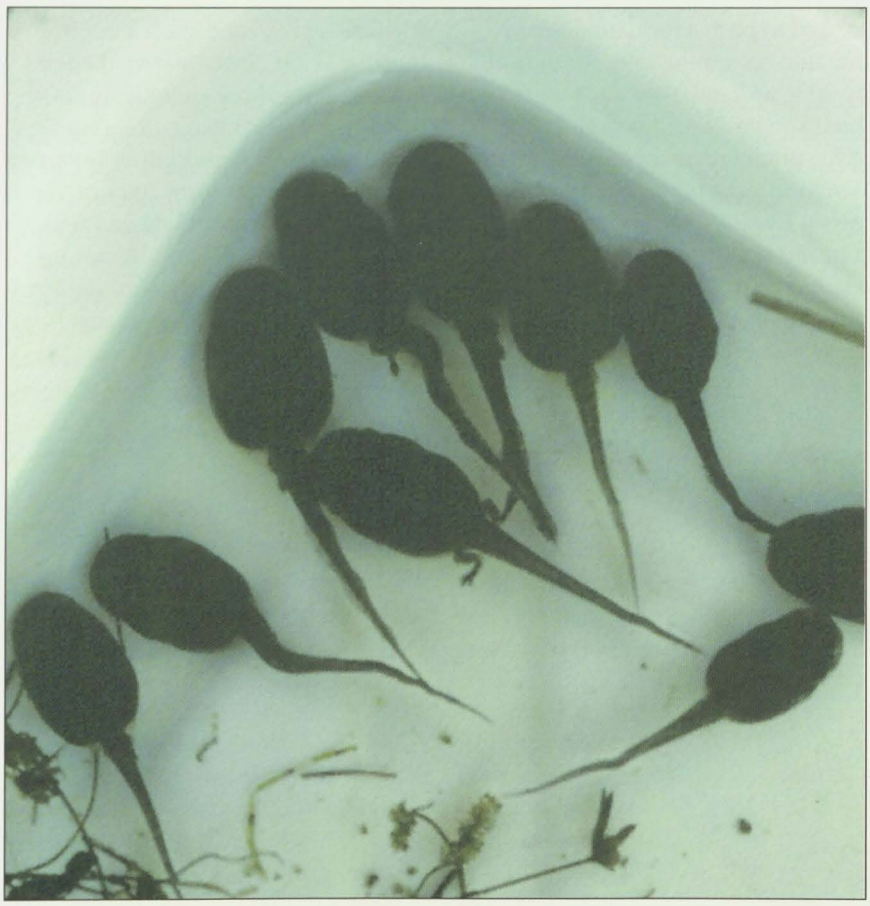
The experiments are continuing.

"What we cannot separate is the effects of causing deformities with causing mortality. Is it killing more frogs than it is deforming frogs?" asked Britson.

Why Florida frogs are being spared the troubles afflicting frogs elsewhere is part of the puzzle scientists are trying to solve. It appears that the elements present in areas reporting the problems are also here but deformed frogs are not.

To help find the answers to such questions, Secretary of Interior Bruce Babbitt in May created an Inter-agency Amphibian Crisis Group to organize information and direct research into what's going on with the frogs.

James Call is the associate editor of Florida Wildlife.



Dr. Stephen T. Threlkeld

Tadpoles with bent tails suggesting developmental problems during the 1996 University of Mississippi experiment.

Confessions of a Frog-watching Bird Watcher

Text and Photographs by Peggy M. Cavanaugh

My name is Peggy and I'm an anuraphile. It all started innocently, when small green treefrogs began gathering around the compact fluorescent wall lamp on the front porch to snack on moths and insects drawn to the light after dark. Often one frog waits in ambush inside the glass lantern while others cluster on the outside or the wall adjacent to it. At first I only watched them once in awhile, certainly not to excess. But when several of them started stalking bugs on the windows, my habit got out of hand. Intent on the hunt on their side of the glass, they take little apparent notice of one watching from inside – something my birding friends say I spend an inordinate amount of time doing.

The green treefrog (*Hyla cinerea*) was the first to capture my attention. An agile acrobat in pursuit of prey, he creeps toward his intended victim until the last possible moment when he leaps, sometimes adhering to the glass with the toe pads of only one foot. Cartilage found between the last two bones of each toe permits the tip of the toe to swivel sideways, or even backward, while the sticky pad remains flat against the climbing surface.

For one so predacious by night, his daytime demeanor is deceptively benign. Resting on a begonia leaf or the rim of a flower pot he looks for all the world like a figurine carved from jade the color of a new leaf, with gold inlays decorating his back. His legs are drawn in close to his body to conserve moisture, hands curved under his chin in a pleasingly catlike pose. May I call them hands without being accused of anthropomorphism? I've seen them used to push a recalcitrant moth further into his gaping maw, or to fastidiously wipe a strand of spider web from his lips. You don't do that with feet.

One plump regular has appropriately chosen the dining room window for her nocturnal feasts. (I'm making an educated guess at the gender – only the adult males sing and this frog doesn't.) She's usually found in the upper left corner of the window where the glass soon becomes smeared with moths' wing scales, miscellaneous insect parts and sticky stuff. To ensure an unobstructed view, I dutifully clean the glass each afternoon – with plain water to avoid delivering any toxins to my friend through her permeable belly skin. I ask you, can a habit be all bad when it induces one to wash windows?

She's green and she's a treefrog, but this one is not *Hyla cinerea*, though I mistook her for one initially, just as I mistook my first tanager for a cardinal. I began to question my skills of observation after noting the uniform color of her back, only to look the next night and find her sporting brown splotches. A curious red spot on the second toe pad of the left foot confirmed that this was the same frog.

At first I only watched them once in awhile, certainly not to excess. But when several of them started stalking bugs on the windows, my habit got out of hand.

The Amphibians (Handbook of Reptiles and Amphibians of Florida, Part Three) by Ray E. Ashton, Jr. and Patricia Sawyer Ashton helped solve the mystery. Under the listing for green treefrog (*Hyla cinerea*), squirrel treefrogs (*Hyla squirella*) are noted as similar, sometimes green but lacking a defined white stripe and having brown sides. Sure enough, the stripe was broken and the area beneath it on the sides more tan than green. But being a neophyte and wanting more assurance I turned to *The Frog Book: North American Toads and Frogs*. Author Mary C. Dickerson suggets that of all the treefrogs of North America, *Hyla squirella* has perhaps the greatest power for rapid color change. Okay, that helped but a clincher was needed. Finally The *Audobon Society Field Guide to North American Reptiles and Amphibians* provided visual reinforcement with photographs of *Hyla squirella* in both the green and brown phases.

So ... not all small green frogs are of the same species. Surely you can understand how, without any prior intention, I fell into keeping a life list. Of course in retrospect, I recall that a similar discovery about little brown birds led to my birdwatching habit. In each case buying that first field guide was my downfall.

It wasn't long before I was making nocturnal forays around the yard. Night after night I indulged, insatiably adding frogs to my life list. A pudgy green frog, sometimes dappled with rich brown spots, but always distinguishable as a barking treefrog (*Hyla gratiosa*) by its granular skin; a spring peeper (*Pseudacris crucifer*), marked with a cross on its back as its scientific name suggests; the southern toad (*Bufo terrestris*) and the leopard frog (*Rana sphenocephala*), all have been added to the list right here in my north central Florida yard.

Now when the sun falls below the yard and I'm taunted with the calls of frogs yet unseen I have come to recognize their voices from a recording offered by the Florida State Museum in Gainesville. *Florida Frog Calls: A Guide to Commonly Heard Frogs and Toads*, features the songs of 20 species. The recording includes the southern cricket frog (*Acris gryllus*), pine woods treefrog (*Hyla femoralis*), and the southern chorus frog (*Pseudacris nigrita*). They all come to serenade me on warm damp nights. I fear that soon my depravity may lead me to endure the mosquitos at the pond down the road.

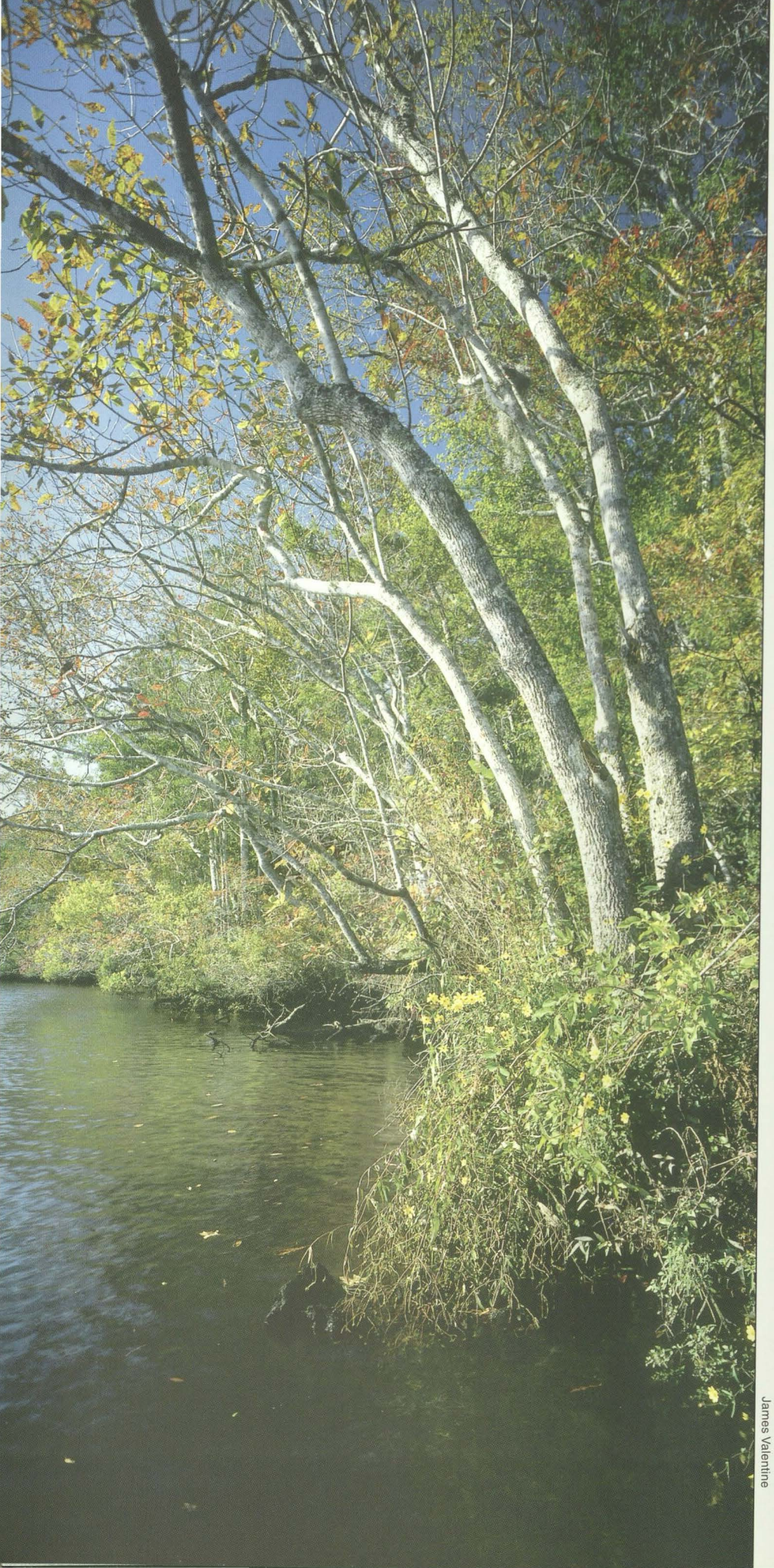
In my defense, let me say I have not given up birdwatching. Each nesting season I voluntarily spend hours on bird population studies conducted by the Cornell Laboratory of Ornithology. Binoculars are integral to my daytime wardrobe. But face it, with the exception of owls, birds aren't doing much at night. Frogs are.

Finally, consider the words of naturalist Archie Carr:

"Frogs do for the night what birds do for the day: they give it a voice. And the voice is a varied and stirring one that ought to be better known."

I rest my case.

Peggy M. Cavanaugh lives in Marion County and is co-author of ***Thirty Ways To Protect The Environment.***



James Valentine

The

By Janisse Ray

Some old-timers like Leo Hance, a local historian from Carabelle, would insist that there is no longer a Tate's Hell. "But you can see where it used to be," he observed.

What you never want is to get stuck in Tate's Hell.

It's easy to do. In wet weather the roads are straight mudholes and in drought they turn to sugar-sand sometimes two feet deep.

Visiting Tate's Hell is like a Hindu soul traveling toward reincarnation – it must stop at one of 21 hells to be purged of bad karma. Tortures include being eaten by crows.

Hell number one is the clearcutting. Hell number two is the ditches. Hell number three is the grid of roads.

There have to be at least 21 hells. Number four is the biting flies. No bathrooms. A long walk out.

It's best to learn about not getting stuck from poor Cebe Tate, who entered the swamp in the late 1800s in search of missing livestock. It's said that he fell into a bog and lost his gun, was snake bitten, became disoriented and feverish, and wandered in the swamp for ten days. When he finally made it out, he stumbled up to the first house he came to, his hair gone completely white.

"Man, what happened to you?" the folks wanted to know.

"My name is Tate and I've been to hell," he replied.

Rings of Hell

If you make it past the rings of purgatory in Tate's Hell, however, great is the reward – a fairyland of dwarf cypress and the heavenly waters of New River.

Tate's Hell Wildlife Management Area is 119,467 acres that sits beneath the Apalachicola National Forest and above Apalachee Bay, between the Ochlockonee and Apalachicola Rivers. The historical swamp was much larger than the current tract, managed as a state forest by the Division of Forestry.

For years the swamp was owned entirely by Proctor and Gamble (P&G), which logged and converted much of it to slash pine plantations. To accomplish this, over 700 miles of rough roads were built, as well as a tic-tac-toe of deep canals that drained the wetland and hurried surface water to the Gulf. The swamp's hydrology was profoundly altered.

In 1988 P&G decided to market Tate's Hell, stipulating that the land be sold in one piece, for cash. At that point conservation agencies scrambled to buy the land, but couldn't come up with the money.

In 1990 a shrewd timber man and real estate developer from Georgia, Jewett Tucker, negotiated to buy the parcel. His plan was to immediately divide and hawk to investors his vision of Pine Coast Plantation, a futuristic community that would include celebrity golf courses and select biotech corporations. Subdividing began.

Despite 74 miles of untouched riverfront, Tucker couldn't scare up enough investors. In 1992 the land was placed on the list of properties proposed for purchase using Preservation 2000 funds, and with cooperation from many state and federal agencies, Florida began to buy parcels of the swamp. Land acquisition continues.

Tate's Hell is not pristine by any stretch of the imagination. Something like 64 percent of it is now in slash pine monocultures that offer little to the ecologist. In the absence of fire, a jungle of shrubs, including both species of titi (swamp and black), wax myrtle, gallberry and fetterbush flourish and make foot travel through the woods nigh impossible.

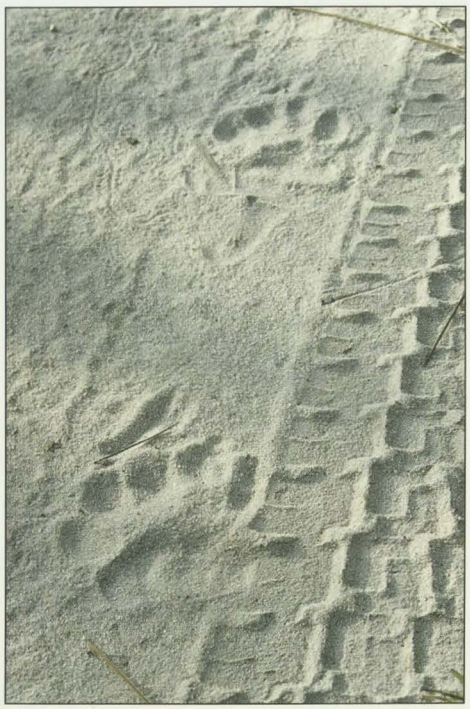
Some old-timers, like Leo Hance, a local historian from Carabelle, would insist that there is no longer a Tate's Hell. "But you can see where it used to be," he observed.

Still, the state had plenty of reasons for buying.

Of utmost importance is water quality – because it encompasses two watersheds, the swamp acts as a great filter for a swath of water that feeds Apalachicola Bay, one of the most ▷

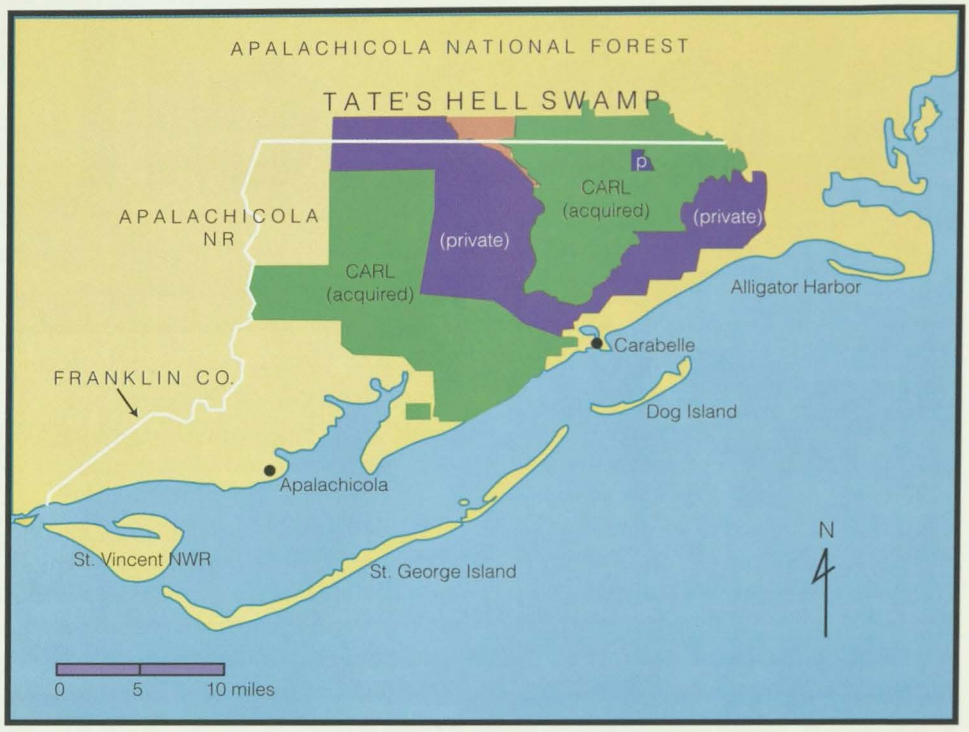
Ted Rose

The forested wetlands and pine flatwoods of Tate's Hell provide ideal habitat for the black bear. Page 8: The Crooked River forms the southeast boundary of Tate's Hell.



Mary Mathews

Bear tracks alongside tire marks on a sandy Tate's Hell road.



CARL: Conservation and Recreational Lands program was established in 1979 to buy and preserve environmentally unique land.

productive seafood nurseries in the northern hemisphere.

A dozen or so endangered and threatened species have managed to hang on in Tate's Hell, including bald eagles, gopher tortoises, American alligators and at least one colony of red-cockaded woodpeckers. Swallow-tailed kites, river otters, flying squirrels and wood storks can be seen along with rare plants like thick-leaved water willow, Chapman's butterwort and small-flowered meadowbeauty.

But of true greatness is a stalwart population of black bears, Florida's largest terrestrial vertebrate, that roam the swamp – forage there, mate there, hide there. Tate's Hell belongs to the bears.

"A lot of people go their whole life without seeing a black bear," said Dan Sullivan, the Florida Game and Fresh Water Fish Commission biologist for

page 10-11 photographs by Janisse Ray

The New River corridor comprises 6,863 acres in Liberty and Franklin Counties.

Tate's Hell. "I've seen so many I've stopped counting."

"You can see a large variety of animals out there, despite what the place has been through," he said.

Not to be ignored is Tate's Hell's place in the landscape.

"Fifty to 60 years of conservation work has been done in the Apalachicola basin," said George Willson of The Nature Conservancy, who was instrumental in the acquisition of portions of the swampland. "Some of the first endangered land purchases were made there." He began to name them: the national forest, St. Vincent Island, St. George Island State Park, Apalachicola Bluffs, St. Marks.

"This is landscape protection on a large-enough scale to support natural predators," he said. He was thinking of the panther. So was I.

It is shocking to learn that clearcutting has not ended in Tate's Hell. As someone described it to me, "They're cutting like banshees out there."

Sullivan tries to explain. "In many cases we bought the property but not the trees," he said. Timber leases were written into the sale agreements; on some tracts logging extends until 2004.

Even so, returning the place to its former grandeur, one we can scarcely imagine – one that held panthers – is the job now facing management agencies.

"Whoever decided to make this a high-ranking CARL project definitely had a long-term outlook," says Sullivan, "and that's what you need with wildlife." CARL stands for Conservation and Recreational Lands.

Ecologists are determining what ecosystems – longleaf pine uplands, cypress swamp, hardwood forests – went where. Prescribed burning is the primary tool for restoration being used, along with replanting of pines. Eventually culverts will be ripped apart, ditches filled in, and roads – so many roads were cut – will be undone.

Carolyn Kindall, an ecologist with Florida Natural Areas Inventory, has been studying aerial photographs and soil maps to determine probable historic locations of wet savannas. "We recommend restoring the look of a landscape," she explained.

She found approximately 27,000 acres that probably featured wet savannas; upon ground-truthing, some of these areas contained remnant bog plants, like white-topped pitcher plant, Chapman's butterwort and spoon-leaved sundew.

The trumpet plant traps insects in its long slender leaves and eats them. Trumpets are one of the rare plants found in Tate's Hell.

"This is a good opportunity to nurture intact areas," she said, "and also to try some ground-level restoration."

When I ask her about the historic range of upland longleaf pine versus lowland slash in the area, she says that's her next project. "I don't know enough right now to say. It's hard to even find records."

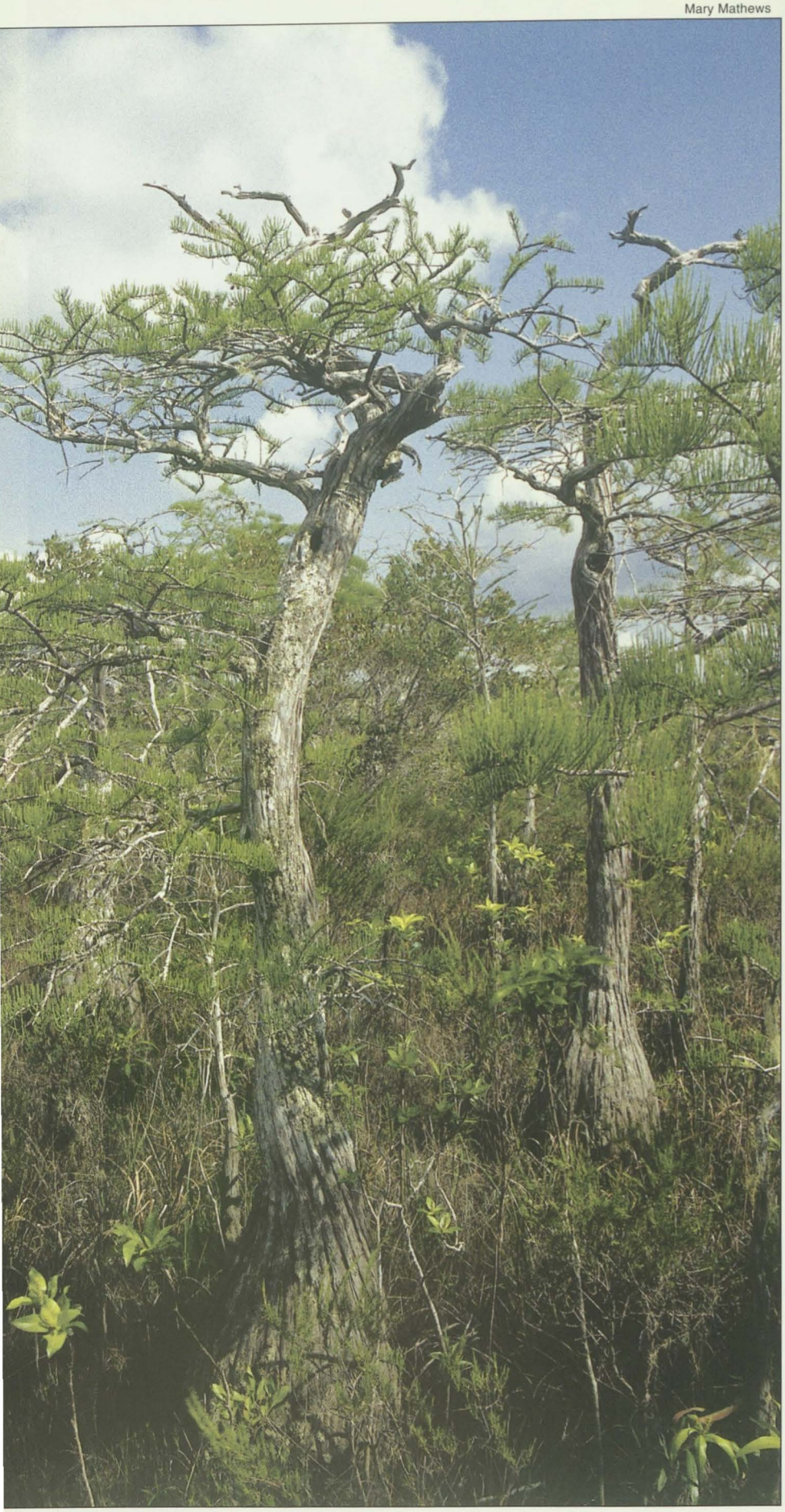
My friend Susan and I are smart enough to leave one vehicle at the edge of Tate's Hell when we go looking for the hatrack cypress. It's so called because the 200-year-old trees are often a little taller than head high. Many scientists have offered explanations for the dwarfing – a hardpan not far below ground, or sulfur in the water – but no one knows for sure.

The roads, of course, are scary, but we make it without getting stuck, which I attribute to Susan's driving. We definitely need a four-wheel-drive.

I'd seen the dwarf cypress four years before, just at sunset, standing in a half-foot of water. The place was enchanting, fragile and wizened, another world. A cottonmouth whirled away through the water. And to think the ancient Greeks thought the damned spent eternity lying face down in a swamp.

This time the hatrack is no less magical. We have our two sons with us ▷

Mary Mathews



Tate's Hell is home to the rare dwarf cypress and 18 endangered plants.

and they wander, young and beautiful, among the tiny old trees. Bright-yellow prothonatary warblers zip here and there, calling, and hatpins are out. Pitcher plants are blooming.

At the edge of the dwarf cypress the pine plantations start, but it is enough to look toward the beauty.

One Christmas Day I canoed New River with an ornithologist friend, Todd Engstrom. He wanted to look for ivory-billed woodpeckers. We put in at the wooden bridge just below Mud Swamp Wilderness because Todd had decided that if ivorybills were to be found, they would be there, in all that wildness.

The river was docile, dark and singing that winter morning, lined with sandy oxbows and sculpted driftwood. Along its banks were strands of cypress and slash pine, towering above an understory of sweet gum, water tupelo, laurel oak, red maple and black gum. The fruits of the Ogeechee tupelo had long fallen.

That day we saw red-bellied and pileated woodpeckers, but no ivorybills.

Dan Sullivan decides to be honest when I ask about hunting. "The area's been pretty well butchered, game-wise," he says. He blames the intense silviculture and heavy hunting in past years.

"When you grow slash pines this thick and exclude fire, it doesn't leave quality food for deer," he said.

He recommends the more-intact Womack Creek Unit (between Highway 67 and the Ochlockonee), which is open to quota hunts only, for deer and wood duck. Squirrel-hunting is good along drains.

In terms of fishing, nice bass have been caught in the New River. Use small lures and light tackle in any of the creeks for bream and redfin pickeral. There is a modern boat ramp at Cash Creek.

For the best Tate's Hell experience, he says, launch a canoe into New or Crooked rivers.

I ask Dan if there's anything more he needs to tell me about Tate's Hell. "Yes," he admits. "I have been stuck."

Janisse Ray is a writer from Baxley, Georgia. Her book "Where The Cutting Ends" (working title) will soon be published.

Ted Rose

South Florida Hog Tactics

By Carolee Boyles

Such is south Florida hog hunting. It can be just like hunting deer, from sitting in a tree stand to stalking an animal through the palmettos. Or it can be wall-to-wall excitement, chasing hogs and hounds through the swamp and hoping you get there before the hogs have the dogs for lunch!

I'd been hunting in a south Florida drizzle for two days without finding the hog I wanted.

Now, though the sky was still gray and heavy, the rain had stopped. A cool north breeze blew into our faces.

It was the last day of the hunt, and I was about to go home meatless. But that didn't bother me nearly as much as the thought that my father might go home without a hog. He had come from Ft. Lauderdale to hunt with me on the Big Cypress Seminole Indian Reservation south of Clewiston, and I wanted him to take home a pig. Although he had hunted whitetails on our farm, he had gone on his own; he and I had never really hunted together. On this hog hunt we would be hunting at the same time, with a chance of taking animals together.

Noah Jim, our Seminole guide, eased the swamp buggy into a thicket of small trees. From where we sat, we could see up a lane where pigs would be feeding as evening approached.

Half an hour later, two small pigs came into the lane.

Then, 125 yards or so away, a big black boar appeared. My father and Noah conferred. My dad eased the .243 to his shoulder. At the shot, the boar dropped.

"Good shot!" Noah said.

My dad and I changed places so I was in the front seat. I wouldn't shoot off the ▷

buggy, since I was carrying a Smith & Wesson 686 revolver with a pistol scope on it; the range was just too far. But once a meat hog – which was what I wanted – came out, I would drop off the buggy and try a stalk.

That was the plan, at least, until a pair of black vultures joined the hunting party. Swooping in from overhead, they eyed the boar with great anticipation. Lower and lower they sailed, until Noah and I climbed down and pulled the boar to the buggy. He was a really nice boar, too; his cutters were almost 3 inches long, the biggest I've seen.

Since we'd already walked around and spooked everything in the area, I climbed into a tree stand overlooking the feeding area. That would give me a 30-yard shot, well within the 75 yards I had set as my limit with the revolver.

After a little while, pigs started filtering back into the lane. First just a couple of little ones came out of the trees. Then there was a lot of grunting and movement behind me. Three pigs trotted by just at the edge of the brush. Soon a gray sow and a piglet came out of the woods to my left. She was a nice sow, but it was a very little piglet, so I didn't shoot.

About 100 yards up the lane, a brown pig with black spots appeared. It crossed the road kind of casually, but was beyond what I had set as my range.

A few minutes later, and 25 yards closer, it crossed the road again. This time I could see that it was a sow. She went into the woods and disappeared.

By now there were eight pigs in front of me, but none of them was the one I wanted. Some were very young; the ones that were big enough just weren't well filled out.

Then the brown and black sow eased out of the woods right in front of me. She was the same size as three of the other pigs I was watching, but unlike them, she was plump and round.

I got the gun up and tried to thumb the hammer back, but my hands were so cold from the wind I had to use both hands. I waited until the sow turned full broadside to me, put the crosshairs just behind her ear, and shot. My dad and I had our pigs.

Such is south Florida hog hunting. It can be just like hunting deer, from sitting in a tree stand to stalking an animal through the palmettos. Or it can be wall-to-wall excitement, chasing hogs and hounds through the swamp and hoping you get there before the hogs have the dogs for lunch!

No matter how you're going to hunt, the first thing you have to do is locate some hogs. Unlike deer, hogs on private land are huntable year 'round. But like deer, hogs usually are found around a food source. Depending on the habitat and time of year, that may be palmetto berries or acorns. They also feed on the roots and tubers of a number of native plants,

Carolee Boyles

Above: Wild Boars are descendants from the pigs brought to Florida by Spanish explorers.
Page 13: Wild hogs can reach up to 300 pounds in weight and stand three feet at the shoulder.

including pinkroot and some nutgrasses.

Like other animals, hogs leave trails in the woods. They also make rubs on trees, rubs which can be distinguished from those of deer because of the dirt ground into them.

And look for areas where hogs have been rooting. Hogs tear up the ground pretty thoroughly, and if you spend a few minutes looking at where they've been you can tell if it's recent or old.

They often start feeding again within a hundred yards of where they last rooted. If you're on the ground you can walk quietly and hear them crunching palmetto berries and other forage. Or, you can bait them with corn or other food.

As far as weapons are concerned, almost anything legal for taking game in Florida will work for hogs. I've taken them with a bow and arrow, a rifle and a handgun, and all three have done the trick. Good rifle calibers are .243, .25-'06 and .30-'06. In handguns anything from a .357 Magnum and up will work, but pay attention to the load you're using; many light loads won't give you the terminal energy you need to stop a large hog.

In shotguns, use a slug, if it's a big trophy hog. For meat hogs, #1 buckshot should do the trick.

One caution about hunting boars: most of them develop a tough "shield" of cartilage over their shoulders and ribs. If you hit one there, you've got to have enough firepower to penetrate all the way into the body cavity for a good kill.

Because the hog is feral, rather than native to Florida, the Florida Game and Fresh Water Fish Commission considers it an exotic species. Thus, its management is significantly different from that of other game animals. On the wildlife management areas, hogs are subject to seasons similar to deer seasons.

But as feral livestock not regulated by the state, hogs are huntable on private land all year. That means your hunting need not end with the close of turkey season. If you have access to private land with hogs on it, you can literally hunt year 'round in south Florida.

Carolee Boyles is frequent contributor to ***Florida Wildlife*** *based in Tampa.*

One caution about hunting boars: most of them develop a tough "shield" of cartilage over their shoulders and ribs. If you hit one there, you've got to have enough firepower to penetrate all the way into the body cavity for a good kill.

Barry Mansell

Hogs have poor eyesight but a keen sense of smell and hearing.

Wildlife Artist Bob Binks

Florida artist Bob Binks has achieved an international reputation for his distinctive rendering of animals and birds.

Contact Bob Binks at: P.O. Box 4473, S. Daytona, FL 32121, (904) 253-3500.

Bob Binks was at a crossroads in his life. It was 1979 and he was working for GE in Daytona Beach but what he really wanted to do was draw. Draw wildlife.

"I've always had this thing for ducks," said Binks, our featured wildlife artist. "A duck was the first thing I ever drew."

Binks endured a cycle of lay-offs and call backs at GE during the 1970s. He filled the time out of work by painting and attending art shows. He also submitted a portrait in the first Florida Duck Stamp competition. Binks won and a decision was made.

"That sure helped me decide to go full-time with art," said Binks.

Since then Binks has achieved an international reputation for his distinctive rendering of animals and birds.

"I portray them the way they are, not the way people think they are. It's from personal experience," explained Binks.

It is also a life-long dream for him to be a professional artist.

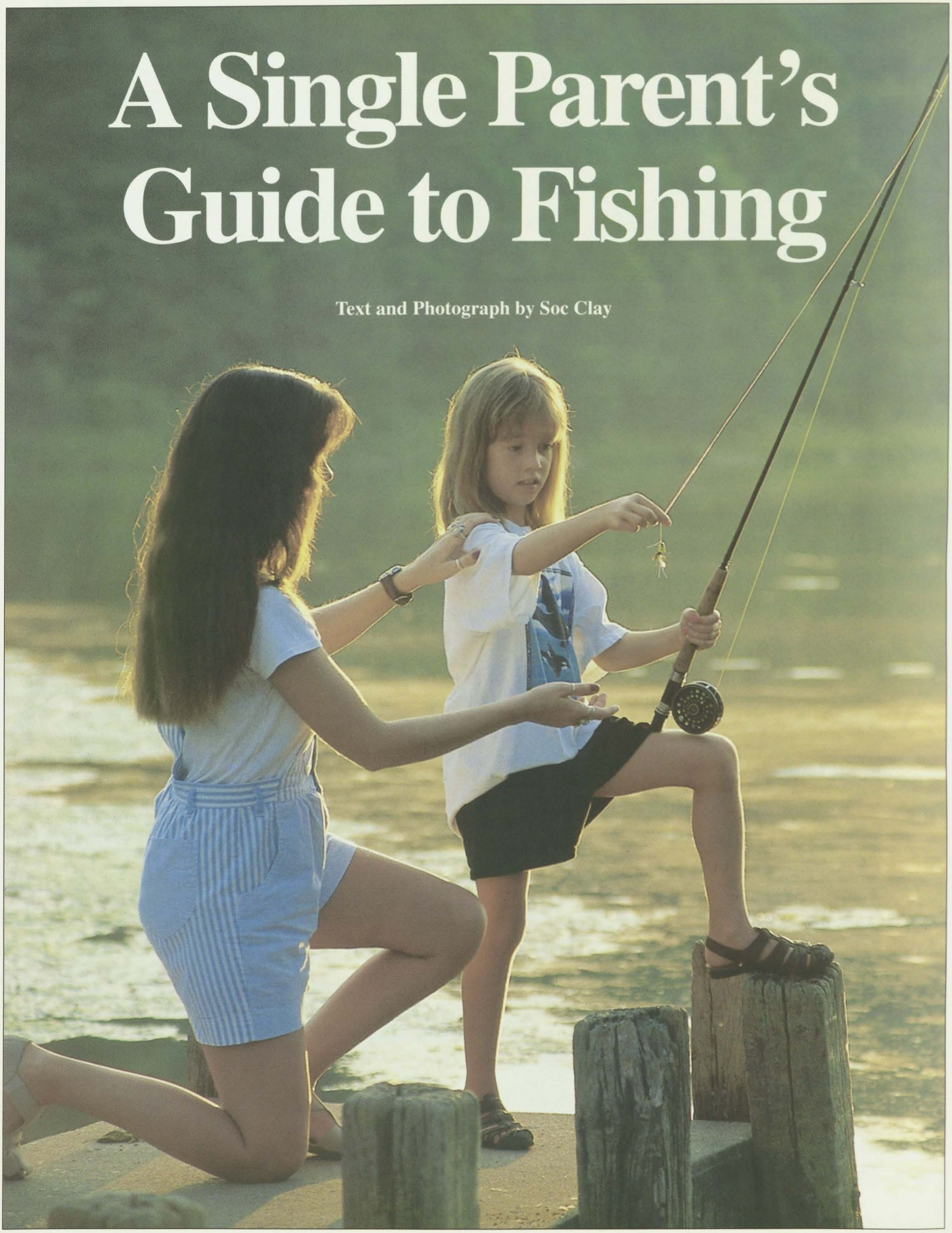
"Ever since I was a little kid. I always liked hunting and fishing," says the St. Louis native, "but I've always wanted to do wildlife. Ever since I was little kid."

– James Call

GREAT BLUE HERONS by Bob Binks
Page 16: GREEN BACKED HERON by Bob Binks.

A Single Parent's Guide to Fishing

Text and Photograph by Soc Clay



By fishing together, parents and their kids can learn the joys of being outdoors and away from the complexities of everyday life.

Today more than one in three children is being raised by a single parent. In Florida, in just one year, divorces alone left more than 54,000 children living with just one parent. According to the U.S. Census Bureau, if the trend of the last 20 years continues, the proportion of homes with children headed by one adult will increase to more than 40 percent by the turn of the century. In most cases, the mother has the primary responsibility for caring for the child.

That means modern moms have the awesome task of developing positive influences for their children. However, finding activities that can have a lasting impact on their kids' future are generally considered in short supply, nowadays.

Researchers say fishing is one timeless activity that brings single-parent families together. Whether it's close to home fishing in the neighborhood park, lake or river, or on vacation to the beach, fishing can put single parents and their children together in a positive environment. Even for parents who have no previous angling experience, learning to fish with their kids can be an exciting, sometimes perplexing, but mostly a fun-filled occasion.

By fishing together, parents and their kids can learn the joys of being outdoors and away form the complexities of everyday life. For some, the fishing part of the experience is the key to this appreciation. To others, fishing merely provides a good reason for getting away to the out-of-doors.

It's important to remember there's nothing like success to get a kid's attention. This holds doubly true for a youngster with a fishing pole in his hands and a worm dangling beneath a bobber in a pond or lake. Even if this means catching only a single fish, a child will absorb the connection of preparation, determination and patience that results in a positive attitude.

Eventually, kids who learn to fish will move past simply reeling in something that pulls at the end of the line, to a greater awareness of the natural world. By making sure the first experiences in fishing results in the kids catching fish, the child will develop confidence in his or her own ability and can enjoy the next outing – even if the fish aren't biting.

Parents who want to make sure the early impressions of the fishing experience are good ones are advised to stop by the local tackle shop to get acquainted with the owner or manager. Such a visit can provide sound advice on the type of equipment best suited for the parent and child, offer suggestions about the best places to fish, provide details on local angling clubs and seminars or offer other helpful information that will make the first fishing trip with the kids a pleasant and successful occasion.

Age & Interest

The age and interest level of a youngster will determine how much the single parent needs to learn about fishing and how much effort will be required. Obviously, if the child is a preteen interested in fly fishing, it's a different ball game than dealing with a six-year-old who simply wants to go fishing.

To some extent, the fish pursued will be dictated by where the parent lives. Panfish, however, are nearly universal and found in most lakes and ponds. Bass may also be there as well as trout in some locations. Single parents who live by saltwater will find numerous piers and backwater estuaries where small fish are easy to catch by children using light tackle and small pieces of shrimp for bait. For a little more expense, party boats are available to place the parent/child smack on top of hungry fish.

Tackle Needed

For beginning fisher folks, be they youngsters or a single parent just learning to fish, spincasting equipment is highly recommended. This tackle is easy to cast, prevents most line foul-ups and the entire outfit including rod, reel, line, hooks, sinkers and a small tackle box can be purchased for less than the cost of a cheap bike. In Florida, if the child is under age, no fishing license is required. That's not the case for adults, of course.

Help Groups

Fishing clubs, seminars and clinics are ideal places to find helpful information and support for single parents and their children. Seminars devoted to beginning anglers are great sources of practical, easy to understand advice. A fishing club is a wonderful place to meet experienced anglers who are delighted to share helpful tips and information with the parent and the children about where to find fish and how to catch them.

Local Fishing Areas

Finding a place to fish is as easy as phoning the local park or recreational department or the area conservation officer. Any tackle shop should be able to direct the single parent to a public place where a youngster will be able to catch a bluegill, a channel catfish or perhaps a stocked trout without too much difficulty.

Publications

Standard advice for beginning anglers is to read, read, read! A multitude of magazines, books and periodicals are available at the local library. There are even Web sites that provide helpful information for beginning anglers. Other sources of information concerning fishing and single parents include The Future Fisherman Foundation: (703) 519-9691.

Whether single parents want to learn how to fish along with their kids, or if they prefer to find someone who will teach their children, the important thing to remember is that fishing should be simple and most importantly it should be fun!

Soc Clay is a professional photographer living in Kentucky.

Jacks for the Taking

Text and photographs by Lt. Stanley H. Kirkland

....but after the story of what happened to Uncle Shorty, I wasn't even sure I would ever lean over the side of our boat again to wash the wiggler juice from my hands.

I'll never forget the first time I heard the story one of my grammar school classmates told several of us, about his "Uncle Shorty" fishing in Pope Lake and dangling his feet over the bow of his small wooden jon boat. As Uncle Shorty wiggled his bare feet just under the surface, suddenly something struck one of his feet and the best Uncle Shorty could determine, it was a chain pickerel of gargantuan size.

As the story went, the huge toothy pickerel finally turned loose of Uncle Shorty's toes but not before inflicting some serious bites and requiring a trip to the nearby medical clinic for stitches. As my friend told the story, the four or five of us guys listening in stared at one another, not even making a sound. It was as if we were listening in on Huck Finn describing his trip the previous night to the grave yard.

Pope Lake, which is more of a cypress studded swamp with occasional spots of water open enough to fish, was one of my and my father's favorite places to fish, but after the story of what happened to Uncle Shorty, I wasn't even sure I would ever lean over the side of our boat again to wash the wiggler juice from my hands.

Thus began my fascination more than 30 years ago with the torpedo-shaped fish known as the chain pickerel (*Esox niger*). Other names applied to this fish include pike, jack, jackfish, eastern pickerel, duck-billed pike and green pike. Where I grew up in the Florida panhandle, Jackson County, almost everyone referred to it as jack.

I think the biggest part of my fascination with jack and catching one on occasion was its sinister toothy look. Largemouth bass, adept predators, are more numerous in most water bodies. The mental image of the jack cruising the shoreline of some lake and latching onto some unsuspecting fish has always intrigued me.

Fisheries biologists say chain pickerel actually have three close cousins in North America. These include the redfin pickerel, which rarely weighs more than 1 1/2 pounds, and the much larger northern pike and muskellunge, which is an introduced species. The chain pickerel is found throughout Florida, with the exception of the Myakka and Peace Rivers in the southwestern part of the state, and westward to Louisiana, up to Missouri and throughout the Eastern states, including southeastern Canada.

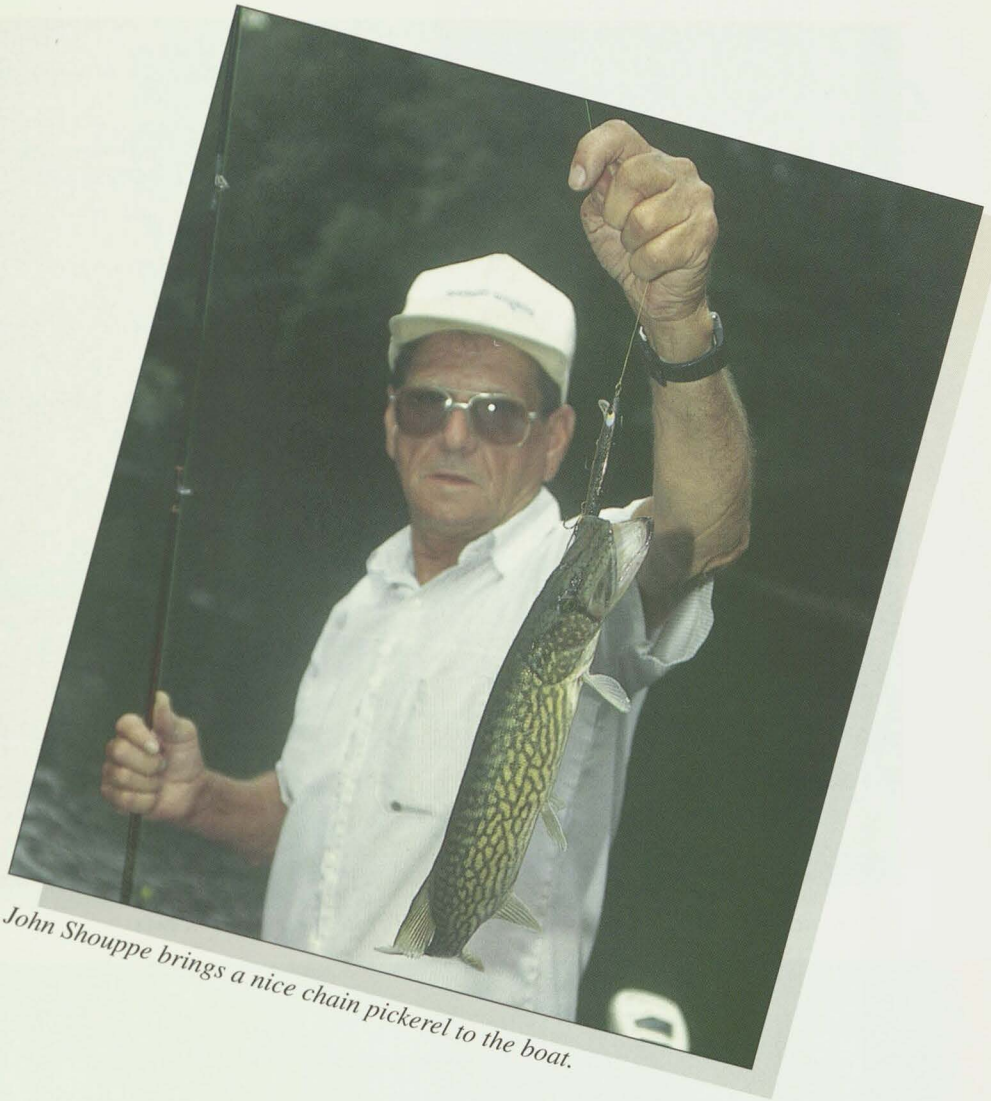
They are a deep olive-green color on the sides and back and a creamy yellow underneath. The olive-green blotches on the chain pickerel appear to create chain-like markings.

They do quite well in a variety of different kinds of water bodies. They're apt to be found in lakes, ponds, creeks, canals, backwaters, swamps and rivers. Wherever you find them, they're likely to be near submerged vegetation, treetops or under overhangs as they wait for prey species to happen along.

Their diet as they grow consists of a variety of fish but includes crayfish, insects, frogs, mice, and there are even authenticated accounts of birds being snatched from the surface.

Chain pickerel of 2- 3 pounds are common in Florida but they get considerably larger. The record for Florida is a 5.75-pound fish from Wrights Creek, a small creek that feeds into the Choctawhatchee River. The world record is a 9.38-pound fish caught in Georgia in 1961.

While there probably have been a few people over the years who went out and specifically targeted jack, most of the fish are no doubt caught unintentionally by largemouth bass anglers casting their normal array of lures or using live shiners or minnows. One angler who has developed quite a knack for catching jack is John Shouppe of Marianna.



John Shouppe brings a nice chain pickerel to the boat.

Typical lures that will catch chain pickerel.

I first met John in 1989 when he called and asked me to meet him with a potential state record longnose gar. We met at Cottondale where we went through the certification process for his 28½-pound gar and have stayed in touch over the years. Last year John told me what a fabulous season he was having catching jack from the Chipola River and, as I discovered, John knew what he was talking about.

We met one day last September at the Chipola above Marianna, launched his 14-foot boat, dragged the boat over two limestone shoals and motored upstream for roughly two miles. With the boat basically in the middle of the river, John eased out a seven-foot logging chain and rope from the stern which slowed our passage down the river to a crawl.

"That way we can fish all the good ▷

Chain pickerel eat only live prey and can easily bite their game in two.

places," he told me. We both tied on crawfish-colored five-inch Rapala-type lures and cast to each bank as we drifted.

"You have to retrieve it real slow or they won't hit it," he said. "You really can't retrieve it slow enough."

On my first cast I began the slow, methodic retrieve and noticed a dark form coming up from the bottom in the clear water. Continuing my retrieve I was amazed when a 17 1/2-inch largemouth slowly engulfed my lure and started back to the bank. After stretching my 8-pound line and giving my drag some work, I posed for a picture and then released the 3 - 4 pound female a short distance downstream.

Almost instantly, John barked, "I've got a fish too." John had cast only inches from the bank near some snags and it was too much for a 14-inch chain pickerel. He released that fish and within five minutes we had each boated another pickerel. In the first 30 minutes of fishing we caught and released the largemouth and five chain pickerel.

We fished for almost two more hours and caught six other pickerel, one 12-inch largemouth and a bowfin that I'd guess weighed 9-10 pounds. Although the biggest pickerel we caught probably wouldn't have exceeded two pounds, John said normally he caught bigger fish.

I almost laughed out loud when I asked John if he ate chain pickerel. "No, I don't eat 'em anymore, not since I tried stumpknockers," he said. Obviously, John had developed a taste for the tiny panfish.

But, many people do eat chain pickerel. In fact, growing up we ate jack often, and still do. One thing you need to understand is the flesh of pickerel has a network of small bones and the preparation has to involve "neutralizing" the bones.

Probably the most common method of preparation and cooking involves scaling the fish and filleting both sides with the skin left attached. Using a sharp, non-serrated knife, cut or "gash" the fillet with vertical cuts every 1/4-inch down to but not through the skin. Then, salt and pepper and use whichever meal or batter you prefer and deep fry. The pieces cook quickly and the tiny dissected bones virtually disappear.

Chain pickerel have always been treated as a game fish with a daily bag limit of 15. However, beginning July 1, 1998 the bag limit is being removed. Biologists say most people don't keep their fish and the rule elimination is part of the Florida Game and Fresh Water Fish Commission's work to simplify its regulations.

Granted that chain pickerel fishing doesn't have the same ring as going striper or largemouth bass fishing, but as Shouppe says, "They're easy to catch and a lot of fun." And, they're found practically everywhere.

But in waters where big pike grow you may want to be careful about dangling your feet over the side of the boat. At least, that would be Uncle Shorty's advice.

Lt. Stanley H. Kirkland is the public information director in the GFC's northwest region.

The Withlacoochee

Canoeing Through Twin Rivers State Forest

By Jim Wagner
Photographs by Gilbert Herndon

When I tell people the Withlacoochee River is where I canoe, they usually comment on what a great place central Florida is. It is confusing, but there are two rivers with this name in Florida. My get-away is in the north central part of the state.

From the Florida-Georgia state line at Madison County, Florida, the (north) Withlacoochee flows for 27 miles to its confluence with the Suwannee River at Suwannee River State Park. Along the way, much of the 14,713-acre Twin Rivers State Forest straddles the river in continuous tracts. Canoeing through the forest offers opportunities for photography, birdwatching, camping, animal-sightings and nature-study.

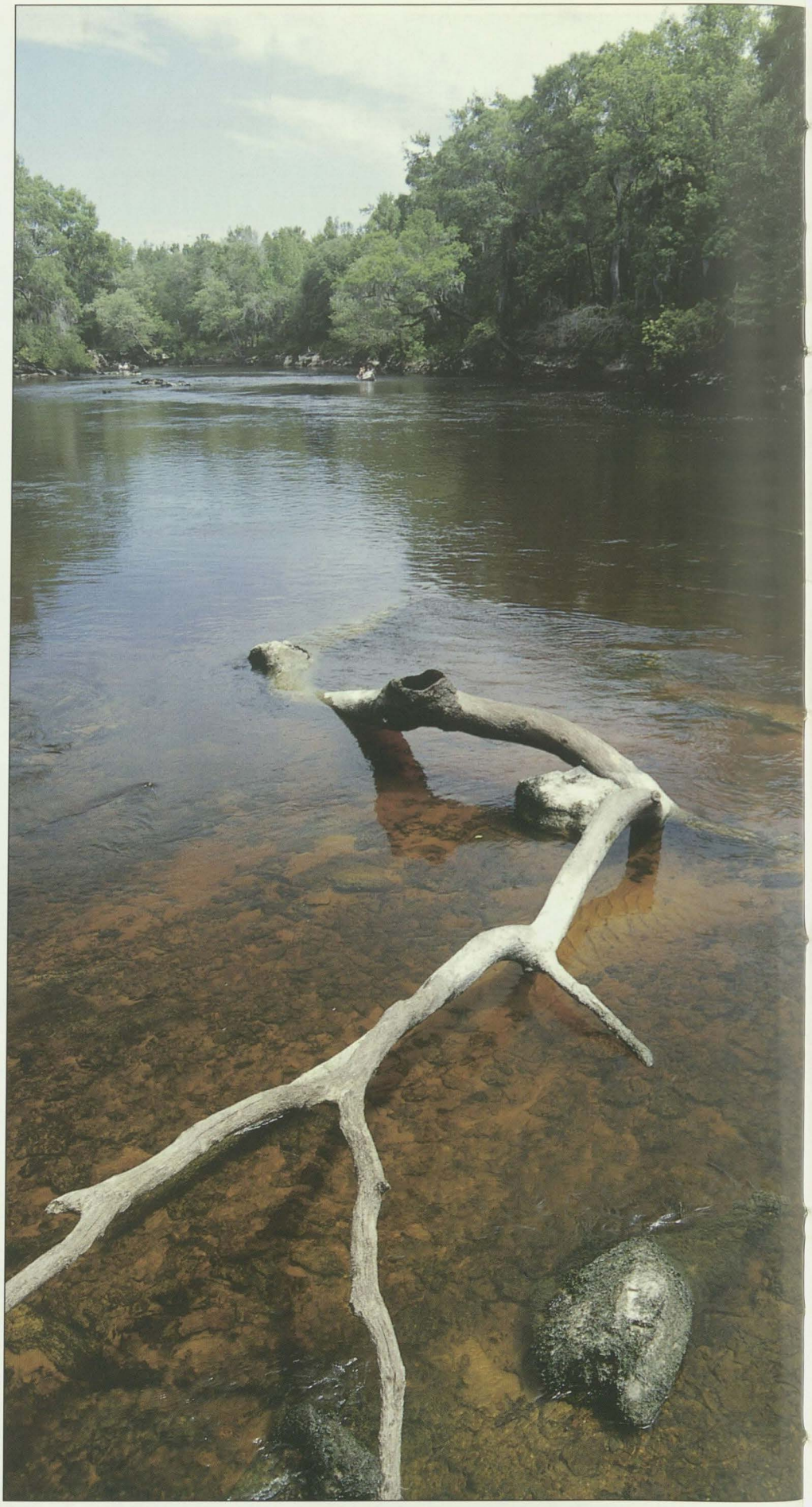
I canoe the Withlacoochee often, and my trips usually take in 5 to 12 miles each. Although I have canoed for up to 3 days in a single outing, short trips give me an opportunity to appreciate the scenery in detail.

The high banks and numerous springs make the river especially beautiful. On the average, there is a shoal every mile. These class one shoals are easily crossed and make canoeing fun. ▷

From the bridge at SR 145 (4 miles north of Pinetta) to the bridge at Bellville (5 miles). This first 5-mile segment of the Withlacoochee is an excellent area to birdwatch. There are no houses or camps along the way, so natural habitats are plentiful.

In the bottomland flood plains, American elm, baldcypress, river birch, sweetgum and water hickory can be found. In the drier upland, live oak, longleaf pine and turkey oak are common.

On one recent summer trip I saw woodpeckers, osprey, wood ducks and red-tailed hawks. Among the wading birds, there were great blue herons, and a lesser blue heron flew directly over the canoe. The kingfishers were the most exciting as they dove for small fish. I witnessed the turbulent harmony of nature as I approached a series of 3 shoals. The water swirled and churned over the rocks. Just below the shoals, the water calmed. This area was alive with kingfishers, and an osprey was perched in a tall cypress. Suddenly, the large bird swooped down to the water and rose with its clutched prey. I



On a winter day in 1996, for example, I was canoeing downstream when I noticed a large tree had fallen from the bank into the river. As I approached, the water was bubbling up out of the bank. This area was familiar to me, so I was surprised to discover a new spring. Since then, I paddle there often to observe its progress.

realized the fishing was good here.

From the Bellville Bridge (CR 150 East, 5 miles east of Pinetta) to SR 6 (10 miles).

The put-in at the Bellville Bridge offers the best canoe access on the Withlacoochee River. There are also areas for canoers to set up primitive camps. However, general camping in Twin Rivers State Forest is not allowed except for special use groups. Information on permitting and regulations can be obtained from the Division of Forestry at the Live Oak Work Center by calling (904) 208-1462.

There are a few houses and camps along this 10-mile stretch, but the area is still abundant with natural communities of plants and animals. Often, this section of river presents me with new revelations.

On a winter day in 1996, for example, I was canoeing downstream when I noticed a large tree had fallen from the bank into the river. As I approached, the water was bubbling up out of the bank. This area was familiar to me, so I was surprised to discover a new spring. Since then, I paddle there often to observe its progress.

Last autumn, while canoeing with Gilbert Herndon, a local resident and professional videographer, we landed 8 miles downstream from the Bellville Bridge. The landing was across from a sandbar frequently used as a campsite and picnic area by canoers.

Because Herndon is a camera man for The Outdoor Trail with Wayne Pearson, which appears on ESPN, he has an eye for the details of nature. Herndon led me up a limestone bank to an open area.

"Did you realize that orange and purple went together so well?" he asked after a moment of observation. Along the perimeter of the clearing, the autumn leaves had turned to hues of amber, gold and orange. Ogeechee tupelo with purple berries was everywhere.

From SR 6 (10 miles east of Madison) to Suwannee River State Park (12 miles).

The last 12-mile stretch of the Withlacoochee has more human habitation. In spite of this, tracts of Twin Rivers State Forest provide ample natural habitats. In addition, there are several large springs along the way which are favorite swimming spots with the locals.

For canoers, there is a primitive campsite on the left bank 7 miles downstream. The only access to this tract of state forest is by canoe, and animal-sightings are common. It is not unusual to see deer, bobcat, alligator and turkey.

About a mile before reaching the Suwannee River, there is one challenging shoal. During periods of low water, it is advisable to portage equipment around it and use a 12 ft. lead rope to guide the empty canoe across. If the water is extremely low, portage the canoe also.

Upon reaching the Suwannee River, turn left and canoe a short distance upstream. The take-out is on the right bank in Suwannee River State Park. The park offers camping with facilities and is a good place to leave a vehicle while paddling.

Canoeing the Withlacoochee through Twin Rivers State Forest is always rewarding for me. At times, even when not canoeing, I go to the river to view a sunset. It reminds me that orange and purple really do go together.

Jim Wagner operates Twin Rivers Outfitters at Pinetta.

The 32-mile Withlacoochee curves through swamplands and hardwood forest before merging with the Suwannee River.

Get Ready for Some Fun in the Sun

Unfortunately, boaters often think of only the recreational aspect and sometimes fail to consider the responsibilities related to recreational boating.

Text and Photographs by
Lt. Richard Moore

Boating is among the leading recreational pastimes in our state.

- **Wear your PFD.**
- **Don't drink and boat.**
- **File a float plan.**
- **Be considerate.**
- **Know the rules.**

Summer and its accompanying warm weather is upon us. The days are getting longer and more pleasant. Those of us who enjoy the outdoors are tempted to abandon the office, leave the yard work behind and venture out to the lakes and rivers for some fun and relaxation. Yes, for many Floridians it is time to get the boat out of storage, dust off the pollen and get it checked out and prepared for the water. Whether your boat is a canoe, kayak, a personal watercraft, a fishing rig or one designed for skiing and cruising ,you share a common goal with all other boaters: to escape from your everyday stresses and have a good time outdoors.

Boating is among the leading recreational pastimes in our state. Florida's seemingly limitless waterways are becoming more and more crowded with boaters of various interests such as fishing, skiing, birdwatching and sightseeing. After all, boating is really just a means of having a good time . . . or is it?

It can be deadly. Last year 67 people died in boating accidents along Florida waterways.

Unfortunately, boaters often think of only the recreational aspect and sometimes fail to consider the responsibilities related to recreational boating. As boat owners, we have both legal and ethical responsibilities to prepare for each outing and operate within certain parameters while on the water. Failure to adequately prepare for a boating trip has been the beginning of a miserable day for an untold number of Florida boaters. Officers say accidents and fatalities are usually related to illegal and unethical boat operations.

The remedy is actually quite simple. A responsible boater is one who is educated about the boating laws, practices safe operation and is courteous to others. The following tips will help ensure an enjoyable and safe boating excursion:

• **Wear your PFD!** This cannot be overemphasized! More than 80 percent of the people who die in boating accidents would be alive today had they been wearing a personal flotation device (PFD). Modern PFDs are comfortable and look good. Put one on and enjoy the peace of mind it can provide.

• **Don't drink and boat!** The 1997 Boating Safety Statistical Report shows that 51 percent of fatalities are alcohol-related.

• **File a float plan.** This is a simple means of ensuring that someone will come looking should you become lost or stranded. Let a friend, neighbor or family member know where you are going and when you expect to return.

• **Be considerate.** Nearly everyone on or near the water is there to relax and have a good time. Treat other boaters with respect by keeping your distance, reducing your wake and yielding the right-of-way. Give those on shore the respect they deserve by keeping the noise and wakes at a minimum. Treating others as we would like to be treated ourselves will go a long way towards reducing hard feelings and boating-related complaints to law enforcement.

• **Know the rules.** It is your responsibility to know safe boating practices, ethics and legal requirements. Ample opportunities abound for folks wishing to improve their knowledge and skills. Booklets, brochures and free boating safety classes are readily available. Take the time to become informed. It may save your life or the life of someone else.

For more information regarding free boating safety classes and publications, call the nearest regional office of the Florida Game and Fresh Water Fish Commission (telephone numbers are listed on the inside cover of *Florida Wildlife*). As you become more informed and develop safe boating habits, you can count on a more enjoyable boating season this year and for many years to come.

Lt. Richard Moore is the assistant boating safety coordinator for the GFC in Tallahassee.

Nationwide 88 percent of boating drowning victims were not wearing a personal floatation device.
Page 26: Most boating fatalities involve a boater who had no training in boat safety procedures.

BOOK REVIEWS

By James Call

The Nature of Florida

John Perry and Jane Greverus Perry, 238 pages (Athens and London: The University of Georgia Press, 1998) $17.95

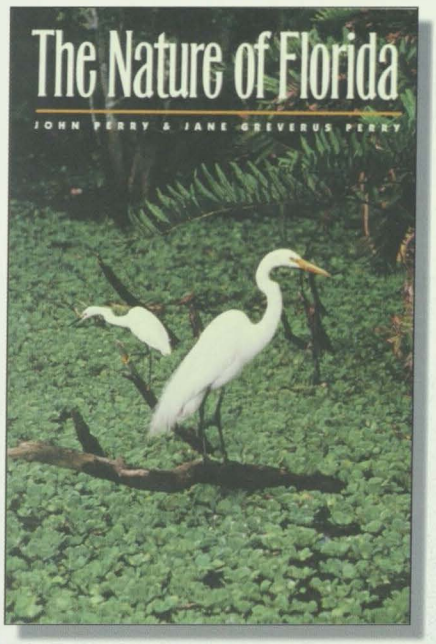
The Perrys present a readable, useful manual for residents and visitors interested in exploring the state of Florida. The Perrys accomplish three things with *The Nature of Florida*. One is an engaging history of the state, going back about 300 million years ago and continuing to the growth management battles of the mid 1980s. Also woven throughout the book in a charming style are the authors' observations and adventures gathered during 40 years of travels in Florida. The last third of the book the Perrys review state parks, wildlife areas, rivers and lakes.

Their Florida is an antithesis of Disney World, dredged channels, irrigated golf courses, mobile home parks and high rise condos. The Florida John and Jane love is the one where even during the height of tourist season, "you can walk or canoe all day in solitude. It is the Florida of wide prairies, cypress swamps, herons and egrets, and thousands of lakes and islands."

They introduce us to historic re-enactors at state parks, "who look blank when asked about anything more recent than 1876." Tell us how development has always been a magical word to Floridians even though, "few politicians knew or cared what that meant." They document the classic battles Florida conservationists have fought and take us underground to explain sinkholes and the different aquifers.

The last section is a guide to Florida's natural areas. It's a quick review encompassing the high bluffs along the Apalachicola River, the marshes of central Florida and the islands and keys in the south. Not only is it a handy guide to state parks and wildlife areas, but it also directs the reader where to go to find more information about the area.

John Perry says he and the late Jane Greverus Perry wrote *The Nature of Florida* as a tribute to their adopted state. It's a fine tribute, offering entertainment and information to delight visitors and residents alike.



A Guide to the Mammals of the Southeastern United States,

Larry N. Brown, 236 pages (Knoxville: The University of Tennessee Press, 1997) $22.95

Did you know the colonization of the southeast by land mammals probably took place when the great ice sheets of the Pleistocene geological era pushed a number of northern mammal species southward into what is now the Southern Appalachians? That's one of the nuggets of information you can mine from Larry N. Brown's *A Guide to the Mammals of the Southeastern United States*. Brown is a former University of South Florida professor and at times sounds like he's still lecturing in the classroom. But he obviously loves his subject. Only someone utterly enthralled by the siren song of the region would conceive the phrase "the cool moist spine of the Appalachian Mountains."

Here we have an author well versed in academia and bureaucratic jargon making a valiant attempt to share his knowledge in language used by normal folks, like you and me. Sometimes he pulls it off. Sometimes you smile. This makes reading interesting and amusing.

If you have kids in the house or time for browsing, this can be a useful book. It will satisfy the needs of a third grader doing a report on black bears and an adult looking to fill the long lazy days of summer with fascinating bits of information about the animals, history and ecology of the states south of Pennsylvania and east of the Mississippi River.

Did you know that the star-nosed mole, ranges from north Florida to the Pennsylvania border, can figure out how to delicately probe traps with its nose and remove the bait without setting off the trap? Or that a porcupine, ranges the Appalachian Mountain chain from West Virginia to southern Tennessee, is covered by 30,000 quills and weighs one pound at birth, twice the weight of a newborn black bear? Larry Brown does and he wants to share that with you.

The Apalachee Indians and Mission San Luis

John H. Hann and Bonnie G. McEwan, 193 pages (University Press of Florida, 1998), cloth $49.95, paper $19.95

John Hann and Bonnie McEwan provide a handy primer about pre-English north Florida. *The Apalachee Indians and Mission of San Luis*

serves as a fine introduction to the Apalachee Indians and the Spanish efforts to settle what is now Leon and Jefferson counties in the panhandle.

The colorful illustrations and breezy writing bring to life a little-known era of Florida history. Hann and McEwan concentrate their efforts on a 30-year period leading up to the decision to abandon the mission at San Luis. By the time San Luis residents arrive as refugees in Pensacola in 1704 the authors have documented daily life in frontier Florida at the end of the 17th century. Their cast of characters, including governors, chiefs, soldiers, ranchers, hunters, friars, warriors and pirates, all have connection to a mission where cultures collided. Hann, a research historian at the San Luis historic site, and McEwan, director of archaeology at the San Luis site, explain how the Spanish and Apalachee social structures and religious practices coexisted.

Photo courtesy of Florida Division of Historical Resources.

Artist conception of the church at Mission San Luis based on archaecological investigations and documentary evidence.

The Apalachee had quite a reputation when the Spaniards first arrived in Florida. Tribes in the Tampa area told Hernando DeSoto about a rich province with fierce warriors further north. He and his men found the Apalachee among extensive fields of maize, beans and squash. Desoto's troops established their 1539 winter camp among the fertile fields of the Apalachee chiefdom in what is today Tallahassee.

The Spaniards found Apalachean society with organized social, political and religious systems. The tribe had a trade network and alliances with other tribes stretching through Georgia, Alabama and westward into the Mississippi Valley and Oklahoma.

A window to this world opens when Hann and McEwan begin reviewing Spanish documents and the archaeological record. The journals of missionaries and official crown representatives tell how Spain laid the foundation to colonize north Florida but then quickly abandoned the area. It's a story involving global politics, local political intrigue and the abuse of power.

Hann and McEwan build a convincing case for what they believe were the conditions of Spanish Florida. They show the Apalachee making numerous requests to the king asking for the removal of an abusive governor. The Apalachee continually complained about the Spaniards' demands for laborers and tributes (taxes), and their humiliating treatment at the hands of the governor, his deputies and their families. Few will argue when the authors write "The Spaniards' loss of Apalachee constituted more of a collapse than a conquest."

Less than 200 years after their encounter with the Spaniards the Apalachee and their chiefdom would be no more. When the British attacked the mission, the Apalachee fled either west where they found protection with the French, east where they were massacred by Indian rivals, or north where they lived among the Creek. The last recorded presence of the Apalachee was made in the 1830s in Texas.

For armchair historians, *The Apalachee Indians and Mission San Luis* is a good starting point for investigating how and why this seemingly powerful tribe disappeared into history.

CONSERVATION UPDATE

Compiled by James Call

Women and the Outdoors

The GFC is looking for women who want to learn about hunting, fishing, hiking and camping.

"Becoming an Outdoors Woman" workshops are scheduled for September 12-14 at the Ocala Youth Camp and for October 17-19 at the Everglades Youth Camp in West Palm Beach.

The camps are geared towards women over the age of 18 who never had an opportunity to learn outdoor sports and skills.

A $100 registration fee covers instruction, equipment, meals and lodging. For more information call the GFC Everglades Regional Office at (561) 625-5122.

Awards

Wallace "Chip" Leavine, assigned to the GFC's Pasco County office, is the 1998 Wildlife Officer of the Year. Since joining the commission in 1987, Leavine has developed several programs aimed at making the agency more efficient and responsive to the public. He pioneered the use of K-9s on enforcement patrols; created a full mount deer to catch illegal hunters, a tactic now used statewide; and he's persuaded the commission to study using mountain bikes as patrol vehicles. Leavine has made several arrests for an assortment of wildlife violations while on bike. Officer Leavine has consistently devised programs that improve customer service and increase community involvement.

GFC

Officer Wallace "Chip" Leavine

Game and Fresh Water Fish Commission Wildlife Officer Robert Daniels is this year's recipient of the Florida Archaeological Council "Steward of Heritage Preservation Award." Daniels is cited for his commitment to the preservation and education of archaeological resources.

New Fisheries Director

Ed Moyer is the new Director of the Game and Fresh Water Fish Commission Division of Fisheries. A 25-year veteran with the GFC, Moyer was most recently the Northwest Regional director stationed in Panama City.

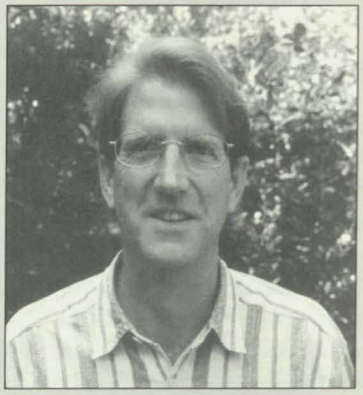
Stan Kirkland

Ed Moyer

Moyer says he's excited about working with a new fisheries program, the Licensing Revitalization Project, which began before he was named to head the division. "It's a great approach," says Moyer. "It's getting us back to the basics, promoting fishing licenses at the county level." Moyer started his new job May 15 in Tallahassee.

Everglades Chief

Mark Robson is the new Everglades Regional Director for the Florida Game and Fresh Water Fish Commission. The West Palm Beach native has degrees from the University of Maine and the University of Florida and has worked with the GFC for 18 years, most recently as a wildlife biologist.

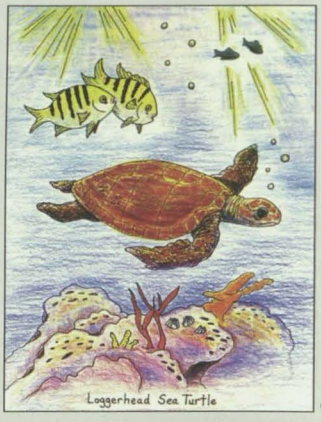


Jim Huffstodt

Mark Robson

Coloring for Conservation

The First Bank of Florida donated 5,000 wildlife coloring books to the GFC for distribution in elementary schools in south Florida. Wildlife officers will hand out the books when they visit the schools. A limited number of the books, *Save Florida's Natural Treasures Coloring Book*, are available to groups such as the Cub Scouts, Brownies and other organizations working with young children and are available free-of-charge by contacting First Bank at (561) 650-2449.



Drawing by Susan H. Young

First Bank has also initiated an effort to help preserve wildlife. The bank will donate $10 to any wildlife conservation group picked by customers opening a new account.

Bass Fishing at Gainesville

Check out Newnans Lake east of

Gainesville for some of the best sunshine bass fishing in the state. Between October and June anglers caught more than 44,000 sunshine bass.

This spring the GFC released another 300,000 fish into the lake.

One out of every 12 sunshine bass caught weighs two to four pounds, according to GFC biologist Randy Myers.

In April and May of 1997, when the water temperature warmed, a tremendous trophy sunshine bass fishery developed in the lake. Several hundred fish weighing more than 7 pounds were caught.

The daily bag limit at Newnans Lake is 20 sunshine bass, you can keep only six fish larger than 24 inches in length. You will find a boat ramp at the south end of the lake off of Highway 20.

Turtle Tumors

A unique virus related to human herpes viruses may be linked to a serious tumor epidemic threatening sea turtles worldwide, according to a team of researchers at the University of Florida. It is the first virus consistently found associated with tumors in turtles.

The tumors frequently appear on or around the eyes, flippers and mouth. Once the lesions impair the turtle's vision and swimming ability, it has difficulty eating and ultimately dies.

The research team has detected the virus in more than 95 percent of the tumors plaguing green and loggerhead sea turtles found in waters surrounding Florida.

Researchers do not believe the virus can transmit the disease to people.

Turkey Dollars

A partnership between the Florida Game and Fresh Water Fish Commission and the Florida Chapter of the National Wild Turkey Federation has more than doubled the money for managing wild turkey habitats.

When both organizations sign off on a project they split the cost, dollar for dollar; the GFC share coming from the sale of turkey permits, the federation share coming from their members.

This method raised more than $15,000 for wild turkey management projects in 1994. Last year the partnership raised more than $37,000 for projects in 15 wildlife management areas.

GFC Approves Four Land Acquistions

At the May 22 GFC meeting the Commission approved land acquisitions to expand three Type I wildlife management areas (WMAs) and one wildlife and environmental area (WEA). The GFC will add 2,086 acres to the Three Lakes WMA, 5,890 acres to the Big Bend WMA, 1,890 acres to the Joe Budd WMA and 6,757 acres to the Apalachicola WEA.

The 1999 Florida Wildlife Photo Contest

The annual *Florida Wildlife* magazine photo contest deadline is June 18, 1999. The contest has three categories: wild birds, wild animals including fresh water fish, and Florida's natural environment. Contact Photo Contest, Florida Wildlife, 620 S. Meridian St., Tallahassee, FL 32399-1600; call (850) 488-5563; request a FAX at (850) 488-1961 or E-mail **subletr@gfc.state.fl.us** Please leave your name and address.

Artist Cover Print Contest

The deadline for the 1999 *Florida Wildlife* cover art competition is Friday, May 14, 1999. Contact the magazine for contest rules at the same address, phone and FAX locations as listed above. Rules will also be posted on the GFC's Web site, **www.gfc.state.fl.us/gfc/** ▷

Janet Garrett

The Game and Fresh Water Fish Commission dedicated a new dam and fishing pier at Lake Miccosukee in March. The pier provides easy access to the 6,300-acre lake.

GFC's Split Oak Mitigation Park and Orange County's Moss Park Host Photo Contest

Kendall Dalton's deer moss takes top honors in the 11 and under category.

Michelle Mangan's shot of a stream was the scenic adult competition winner.

Congratulations to the winners of the Split Oak/Moss Park photo contest. In the children's competition 13-year-old Josh Gregg, a seventh-grader at Discovery Middle School, won first prize in the 12 and older category with a picture of a live oak tree. Ten-year-old Kendall Dalton, a fifth-grader at Hunter's Creek Elementary, took top honors for children 11 and under with her entry of deer moss.

In the adult categories, Mary Meehan won the wildlife division with her shot of a sandhill crane and the scenic winner was Michelle Mangan's photograph of a stream. Sponsors plan to hold the contest annually.

Mary Meehan wins first place in the adult wildlife category with this sandhill crane photo.

Josh Gregg's photo of a live oak tree is the best in the 12 and older category.

A Tribute To
Marjory Stoneman Douglas

Sometimes it's how you say it. Before you can get people to look at a problem and take up an issue, you must capture their imagination. Present the problem in a way that people see and understand it the way you do.

Marjory Stoneman Douglas did that when she wrote "There are no other Everglades in the world." What many thought was a vast swamp she called a "river of grass." Those three words, from Douglas's landmark 1947 *The Everglades; River of Grass*, changed the question from how to drain and develop the Everglades to how do we preserve and protect it? Marjory Stoneman Douglas died at her Miami home May 14. She was 108.

"She was a prophet with the sensibility of a poet," says Miami-Dade County Commissioner Katy Sorenson.

Poetry was just one of the talents of this child of the nineteenth century. In the 1920s one of her poems, about a boy beaten to death in a labor camp, prompted the Florida Legislature to outlaw labor camp beatings. Upon her arrival in Florida as a recent college graduate in 1915, Marjory Stoneman Douglas fought for equal rights for women and supported civil rights; campaigned for indoor plumbing in Miami's poor neighborhoods; created the first Miami charity not connected to a church; formed Friends of the Everglades, originally to combat plans for a jetport in the Everglades and now to monitor the health of the Everglades system; championed conservation long before there was an Earth Day and wrote nine books.

According to her wishes, Marjory Stoneman Douglas' ashes were scattered in her beloved Everglades during a ceremony May 23.

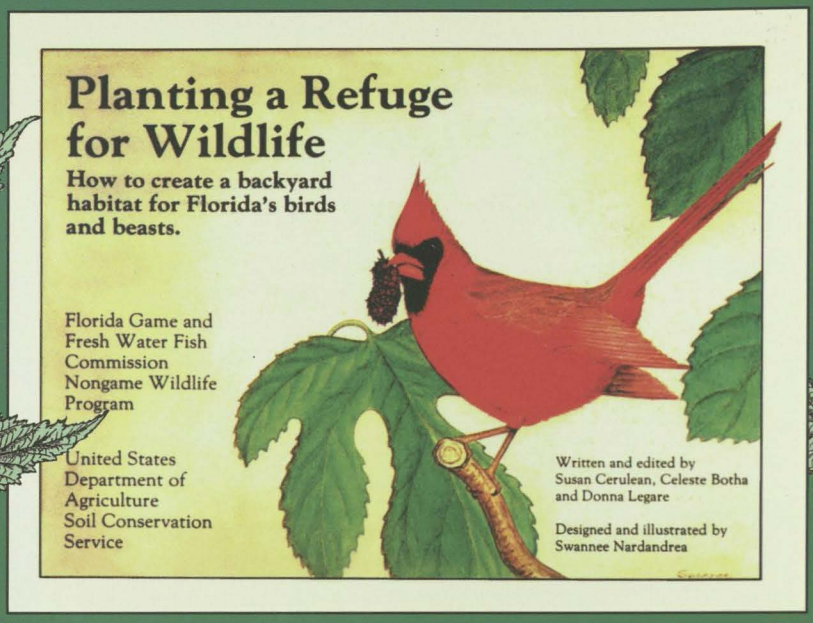
Still she will always be remembered for that phrase, river of grass. The same year she published her book 1.6 million acres was designated as Everglades National Park and the Army Corps of Engineers announced plans to drain the glades. Marjory had found her life's work.

She came to Florida when there were fewer than two million people living here, there were only 5,000 people in Miami at the time, and watched it grow and encroach on the fragile Everglades eco-system from a cottage she built herself in Coconut Grove.

Woe unto the forces that threaten her beloved Everglades. Senator Bob Graham recalls being lobbied by Douglas: "She conveyed one simple, blunt message: We would safeguard the health of the Everglades, and if we didn't, we would spend an uncomfortable afterlife in hell."

Her legacy to the conservation community perhaps was best stated by President Clinton in 1993 when Marjory Stoneman Douglas was awarded the Presidential Medal of Freedom. "Marjory Stoneman Douglas is a mentor for all of us who desire to preserve what we Southerners affectionately call a sense of place."

– James Call



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